

2015 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS
March 16, 2015

Tuesday March 17th: *3rd Year Organic Seminar: Yilei Wu*
 Ryan Hall 4003
 11:00am – 12:00pm

For full schedule, including Center events, please see the Department Calendar:
<http://www.chemistry.northwestern.edu/events/calendar.html>

BIP

Meets every Friday at 2:45pm in Tech K140

Arrivals

Alberto Riano Carnerero joined the Marks Group

Opportunities

Pfizer: Enzymologist/Biochemist, Oncology Research Unit (Non-PhD) La Jolla, California

Visit www.pfizercareers.com and apply to job ID 1008805

All over the world, Pfizer colleagues are working together to positively impact health for everyone, everywhere. Each position at Pfizer touches and contributes to the success of our business and our world. That's why, as one of the global leaders in the biopharmaceutical industry, Pfizer is committed to seeking out inspired new talent who share our core values and mission of making the world a healthier place.

Role Description:

Kinase signaling pathways regulate important cellular functions related to cancer tumorigenesis. The development of targeted kinase inhibitors has revolutionized the effective treatment of cancer patients. This Enzymologist/Biochemist will make important contributions to our molecular and biochemical understanding of these kinase signaling pathways through the development of robust, automated kinase activity assays and selectivity screens to drive the SAR (structure-activity relationship) of our kinase inhibitor projects. The scientist will provide high quality data that drives decisions on projects and seeks to better understand the kinase signaling pathways involved in cancer malignancies.

- Provides expertise to the development and implementation of robust, automated biochemical assays for enzyme targets, including kinase activity assays
- Generates high quality data and correlates in vitro and in vivo SAR for small molecule projects
- Develops and implements innovative biochemical selectivity screens for projects
- Works with CROs to effectively manage resources for project activities

Qualifications

- Bachelors of Science degree + 2-5 years of experience, or Masters of Science degree + 1-2 years of experience
- Biochemist with experience in kinase signaling and drug discovery. Must have strong technical abilities and skilled in performing biochemical analysis and the development of automated plate-based biochemical assays. Preference for candidates with pharmaceutical/biotech drug discovery experience in evaluating small-molecule inhibitors against enzyme targets, including protein kinases.

Core Competencies:

- Experienced in enzyme kinetics, enzyme assay development, good understanding of enzyme inhibition mechanisms and SAR for drug discovery. Preference for candidate with strong background in protein kinase drug discovery.
- Good track record for performing multiple robust, automated assays simultaneously
- Skilled in analysis of assay data and presenting data in written and oral reports
- Demonstrated ability to work and contribute to project teams in a collaborative environment
- Develop pathway analysis tools and methods to measure multiple cell metabolites simultaneously (LC-MS/MS, isotopes) and link enzymology (metabolic pathways, kinetics) & bioanalytical methods for molecular fingerprints (mass spectroscopy, kinetic studies, HPLC)
- Experienced in the design and development of robust, automated biochemical and functional assays. Strong biochemistry background, highly skilled in biochemical methods such as enzyme kinetics, protein characterization, tumor metabolism, and signal transduction with a good understanding of the link between cancer molecular targets, protein complexes, target modulation, and disease.
- Skilled in automated plate-based assay systems, liquid handling instruments, and detectors for various assay formats: spectrophotometric, fluorescence, radiometric. A demonstrated track record in the successful development and implementation of automated enzyme and biochemical assays for the screening of compounds, data analysis, and integrating of biochemical data into an understanding of the MOA of small molecule and biologic lead candidates.
- Established track record for the transfer and management of assays performed at CROs.

Core Quantum Technologies is seeking highly motivated PhD level engineers or scientists for a research scientist position in chemical and biomolecular engineering. CQT is a dynamic start-up focused on developing quantum dot nanoparticle reagents for liquid and solid tumor biopsy pathological imaging. CQT was founded in 2012 as an Ohio State University Technology Commercialization Company and is housed at the TechColumbus technology incubator in Columbus, OH. CQT was the winner of the 2012 Fisher Business School Business Plan Competition, participant in the NSF I-Corps Entrepreneurial Boot Camp, and recipient of Technology Validation Start-Up Funding from the Ohio Third Frontier Program. CQT has received funding from federal, state, and private equity sources.

The desired candidate should possess:

- A PhD or equivalent in Chemical Engineering, Biomedical Engineering, Chemistry or Physics
- Self-motivation and ability to work independently
- Quantum dot synthesis experience
- Experience with block-polymer self-assembly
- Experience with electrospray or electrospinning for high volume nanomanufacturing
- Experience with nanoparticle transfer from organic to aqueous phase
- Experience with nanoparticle physics and optical property characterization, i.e., absorbance,

- photoluminescence
- Experience with general nanoparticle characterization, i.e., transmission electron microscopy, dynamic light scattering, zeta potential measurement
- Experience with bioconjugation protocols for antibodies and avidin-biotin coupling
- Downstream processing experience for small volume products, including separation via centrifugation, dialysis, filtration
- Ability to establish GMP documentation and QC procedures for eventual FDA application

CQT is an equal opportunity employer and will not discriminate on the basis of race, color, sex, national origin, religion, disability, age, protected genetic information, sexual orientation or parental status. A compensation package of up to \$70K based on expertise, a healthcare allowance, and equity participation are available to qualified candidates. If interested, please contact Dr. Jessica Winter, winter.63@osu.edu. Core Quantum Technologies is located at 1275 Kinnear Road, Columbus, Ohio 43212

The 9th annual BEST Symposium, hosted by The Dow Chemical Company, will be held in Midland, MI on September, 14-16, 2015. BEST (Building Engineering and Science Talent) introduces doctoral and post-doctoral scientists from U.S. ethnic minority groups (Hispanic, African American or Native American) to the wide range of rewarding careers in industrial research particularly the many opportunities available with Dow, where we create innovation at the intersection of chemistry, biology and physics. This conference, developed jointly by Dow's minority scientists and Ph.D. recruiting team, supports the company's commitment to a diverse work force.

Applicants must be pursuing degrees in chemistry, chemical engineering, materials science, physics, biochemistry, molecular biology, microbiology, or other closely related fields and should be within 18 months of degree completion by the conference date. Please encourage any students that you identify to apply for the conference by visiting our website at <http://www.dow.com/BEST>. All applications are due by June 15, 2015.

All travel expenses, meals and hotel accommodations for those selected to participate in the BEST Symposium will be paid for by The Dow Chemical Company. However, participation neither obligates the student to apply for employment, nor guarantees future consideration for employment by The Dow Chemical Company. If you would like additional information on BEST, please contact Lidaris San Miguel Rivera, 2015 BEST Symposium Chairperson
The Dow Chemical Company 1707 Building, Midland, MI 48642 phone: 989-636-9535 | email: best@dow.com

The Department of Materials Science and NanoEngineering in the George R. Brown School of Engineering at Rice University, located in Houston, Texas, invites applications for a tenure-track position at the Assistant Professor level with an anticipated start date of July 1, 2015.

We seek an individual who has demonstrated excellence and expertise as an experimentalist, specifically focused in the study of metallic systems. A successful candidate will hold a Ph.D., or will have fulfilled the Ph.D. requirements by November 1 of the year employment commences, in a closely related discipline.

Applicants are expected to teach undergraduate and graduate courses. Successful applicants must also have a strong commitment to, and potential for excellence in, teaching, research, and service.

Applications should include a detailed curriculum vita that includes a list of publications, a brief statement of research and teaching interests, and the names of at least four references with references' postal and email addresses, and telephone and fax information. These documents can be uploaded when you apply for this position at <http://msne-facultyapps.rice.edu> .

Candidates from under-represented groups, including women, are encouraged to apply. This position will be kept open until filled but priority will be given to applications received before April 1, 2015. The position is at the assistant professor level but exceptional candidates at higher levels may apply. For information about the department, visit our website at www.msne.rice.edu.

Rice University is an Affirmative Action/Equal Opportunity Employer, committed to excellence through diversity.

The Purdue University Center for Drug Discovery currently has an opportunity for a postdoctoral researcher in the research group of Professor Philip S. Low. We are seeking a highly motivated candidate to join a multidisciplinary team that aims to discover, develop and translate promising new candidates into the drugs of tomorrow.

Research experience in biochemistry, molecular biology or hematology is required. Research experience in human erythrocyte biochemistry is preferred. Experience in cloning, site-directed mutagenesis, expression/purification and characterization of recombinant proteins is preferred. Experience with the routine culturing of mammalian cells is also strongly desired. Candidates with a strong background in erythrocyte characterization, hematology and a strong background in standard biochemistry techniques are especially encouraged to apply.

The successful candidate should be able to use their discretion and independent judgment in all areas of research including experimental design, project management, and implementing strategies for cross-functional teamwork and collaboration. They will be responsible and accountable for the design of lab experiments, be able to delegate and manage day-to-day research procedures efficiently. Furthermore, excellent oral and written communication skills in English are essential.

Responsibilities will also include preparing data for both publication and grant application purposes, participation in formulating ideas and concepts for grants, writing manuscripts for peer review publication, presenting research results at conferences and major meetings, and participating in discussions with international scientists to lead and support research. Knowledge of all applicable NIH and OSHA safety rules, as well as ensuring that all safety regulations and proper methods for handling potentially dangerous chemicals, pathogens, substances and materials are followed is also required.

Requirements:

Applicant must have a PhD and a track record of accomplishment and creative scientific contributions as evidenced by publications and/or presentation at scientific meetings.

How to apply:

Please submit a cover letter, CV, a research summary of 2 pages or less, and contact information for 2 references combined into a single PDF file by email to: lowreserachgroup@gmail.com

Green Plains Renewable Energy, Inc is taking applications for an Environmental, Health, Safety and Security Assistant. This EHSS entry-level, career development position supports programs concerning ethanol plant EHSS compliance. This position works under immediate supervision of the regional Senior EHSS Manager. Responsibilities include assisting with employee training, using monitoring and test equipment, gathering data, preparing reports, and updating environmental management plans. While the

position is largely focused towards environmental compliance, some overlap into safety and health can be expected.

Essential Functions:

- Conduct/coordinate/support Environment, Health, Safety, and Security (EHSS) training in accordance with applicable regulatory requirements.
- Conduct Leak Detection and Repair monitoring, data input and report generation at assigned plants to ensure compliance with applicable Subpart VV and VVa monitoring and reporting requirements.
- Conduct inspections using established checklists to document compliance with environmental or safety requirements
- Collect environmental samples (soil, air, water, waste, etc) as directed.
- Collect safety compliance information, conduct equipment inspections, and provide employee safety support.
- Promote EHSS awareness at the plant and monitor for EHSS compliance.
- Provide support for the EHSS committees at sites where needed.
- Communicate with the EHSS Manager and follow through with their directions, suggestions and concerns.
- Assist Senior EHSS Manager in developing and implementing policies and procedures to go above and beyond those required by local, state, and federal regulations pertaining to EHSS.
- Provide support for investigations for EHSS related incidents and near misses.
- Follow-up and track corrective actions for incidents in a timely manner.
- Maintain up-to-date records at all times to comply with inspections by state and federal agencies.
- Keep all regulatory related records and reports on file for the required amount of time.
- Willingness to learn the process of an ethanol plant, the associated environmental permits and regulations, and work in a team atmosphere.
- Other tasks as necessary to support the EHSS department

Knowledge, Skills and Abilities

- Basic knowledge of federal, state, and local regulations dealing with environmental permitting, air and water quality (Title V a plus), hazardous waste, emergency response and mitigation, water use and discharge, storm water, leak detection and repair, spill prevention controls and countermeasures, risk management and facility response plans. Knowledge of process safety management and OSHA general industry standards a plus but not mandatory.
- Detail-oriented; proficiency for accuracy; dependable; positive attitude; team player
- Strong MS Office experience and proficiency with developing and using spreadsheets and/or databases.
- Ability to multi-task and take ownership of assigned projects
- Ability to lead by example
- Good communication skills, both written and verbal
- Ability to travel to at least 2 other facilities on a monthly basis to perform essential functions such as LDAR inspections
- Ability to traverse rough ground, climb or descend stairs and ladders while carrying equipment (weighing up to 25 lbs) and to work at heights or in enclosed spaces
- Work includes both an office and outdoors in all seasons.

Essential Requirements

- Bachelor degree in science, engineering, or related field required and 0-3 years experience in related field. Transcripts required, 3.0 GPA minimum required.
- Must be willing to relocate

- Travel up to 25%

Green Plains Renewable Energy offers competitive pay; a generous benefit package; paid holidays, vacation and sick time; retirement savings plan; flexible spending accounts; and more. Interested applicants please send resume via email to: careers@gpreinc.com

Green Plains Renewable Energy, Inc is accepting applications for an Environmental, Health, Safety, & Security Manager

Summary: This position outlines and implements programs concerning environmental regulatory compliance, employee EHSS procedures and accident protection and prevention. Responsibilities also include training on educational materials, inspecting company facilities, and recommending corrections or additional precautions to ensure compliance to established regulations. A strong environmental background is required, and Title V experience is a plus. This position works under immediate supervision of the Senior EHSS Manager and works closely with the Plant Manager at the location.

Essential Functions:

- Manage Environmental Regulatory Compliance of a Title V facility
- Manage facility air permits, SWPP, SPCC, FRP, TRI, Tier II, HazWaste, FCC, FDA, FAA, HazMat, and other Regulatory Compliance records and reports
- Conduct Environment, Health, Safety, and Security (EHSS) training in accordance with applicable regulatory requirements
- Promote EHSS awareness at the plant and monitor for EHSS compliance
- Elect and provide leadership for the EHSS committee
- Communicate with the EHSS committee and follow through with their suggestions and concerns
- Implement and enforce policies and procedures to go above and beyond those required by local, state, and federal regulations pertaining to EHSS. Support GPRE programs as defined
- Conduct investigations for all EHSS related incidents and near misses
- Implement containment and corrective actions for all incidents in a timely manner
- Maintain up-to-date records at all times to comply with inspections by state and federal agencies using GPRE file structure
- Keep all regulatory related records and reports on file for the required amount of time
- Maintain inventory on all EHSS supplies and PPE
- Assist production/maintenance team with, but not limited to; housekeeping, testing
- Willingness to learn the process of the plant and work in a team atmosphere

Knowledge, Skills and Abilities

- Working knowledge of federal, state, and local regulations dealing with EPA Title V regulations, NPDES, process safety management, OSHA general industry and construction standards, air and water quality, hazardous waste, emergency response and mitigation, water use and discharge, storm water, leak detection and repair, spill prevention controls and countermeasures, risk management and facility response plan
- Detail-oriented; proficiency for accuracy; dependable; positive attitude; team player
- Knowledge of root cause analysis techniques
- Strong MS Office experience and proficiency with developing and using spreadsheets and/or databases.
- Ability to multi-task and take ownership of assigned projects

- Ability to lead by example
- Good communication skills, both written and verbal
- Exceptional organizational skills as they pertain to record keeping and reporting

Essential Requirements

- Bachelor degree in science, engineering, or related field required
- 5 Years experience in Environmental Management or advancement through EHSS Assistant position required
- Some travel is required, seasonally, and to support company growth

Green Plains Renewable Energy offers competitive pay; a generous benefit package; paid holidays, vacation and sick time; retirement savings plan; flexible spending accounts; and more. Interested applicants please send resume via email to: careers@gpreinc.com

Green Plains Renewable Energy, Inc is accepting applications for a PSM Coordinator

Green Plains Renewable Energy, Inc., North America's fourth largest ethanol producer, recently ranked 8th on Fortune's 100 Fastest Growing Company list has an immediate need for a Temporary PSM Coordinators at our ethanol facilities in Atkinson, Nebraska, Fairmont, Minnesota and Wood River, Nebraska.

Green Plains currently operates a total of twelve ethanol plants. We also market and distribute ethanol for independent third-party ethanol producers, and we operate grain storage facilities and complementary agronomy and petroleum businesses. We are a growth company and we seek to continue our growth by adding grain storage facilities, ethanol plants, fueling terminals and more.

Summary of Position:

The PSM Coordinator will ensure company compliance with OSHA Process Safety Management (PSM) and EPA Risk Management Plan (RMP) rules by developing and implementing tools and management systems necessary to improve the basic elements.

Responsibilities include but are not limited to the following:

- Gather and centrally organize information pertaining to the elements in support of Green Plains ethanol plants
- Work with each process department to gain insight into the activities, processes, hazards, and risk prevention mechanisms for each task.
- Improve existing company PSM program elements, including, but not limited to:
 - Confined Space Profiles
 - Standard Operating procedures (SOPs)
 - LOTO Profiles
- Implement a point of use library containing all process safety information in accordance with OSHA 1910.119 following EHS&S Director's guidance
- Organize PHAs and Compliance Audits and track progress on Corrective Actions
- Work to develop databases for safety inspections, self assessments, and incident investigations
- Assist with Safety program administration to include: training, conducting walk-throughs and PSM committee participation

Skills and Requirements:

- Ability to climb ladders and stairs with heights exceeding 100 ft

- Ability to work outdoors in various weather conditions
- Ability to wear PPE
- Ability to travel when required for business (about 25%)
- Excellent time management and organization skills
- Solid communication skills both verbal and written to communicate with all levels of organization
- Computer skills, particularly Microsoft Word and Excel
- Previous background in safety, health, engineering or industrial emergency response
- Bachelor's degree in related field preferred (Engineering or Hard Science)
- PSM background/experience or safety experience preferred

This is a temporary, project based position, anticipated to last approximately 9 months. Green Plains offers competitive pay and incentive(s).

Interested applicants, please send resume with salary expectations via email to: careers@gpreinc.com

Carus Group's search for the innovators of our second century Scholarship/Internship

Opportunity Are you interested in using chemistry to create a cleaner, safer, greener Earth? Carus Group is offering a scholarship plus a paid internship opportunity* to a student who proposes an innovative idea using chemistry to solve an environmental problem.

Prize: \$10,000 scholarship to the accredited school of your choice plus an opportunity to intern at Carus Group's Illinois research laboratory

What we do: Carus Group is a leading global supplier of environmental solutions for water treatment, air purification, and soil remediation. Carus has a 100-year history of identifying customers' needs, and innovating new ways to solve them using chemistry. Our products help clean drinking water and waste water in communities around the world, remove pollutants from air, and eliminate toxins from soil. We want to do more! This year, Carus Group turns 100, and we are looking to collaborate with you, the innovators of our *second* century, to discover new ways to protect the environment.

How to apply: Carus will accept written proposals through March 22, 2015. Qualifying submissions will present an innovative, marketable, practical, new environmental solution using one or more of the following:

- Potassium Permanganate (KMnO₄)
- Sodium Permanganate (NaMnO₄)
- Hopcalite Catalyst (Manganese and Copper Oxides)
- Manganese dioxide (MnO₂)
- Polyphosphates (e.g., orthophosphate, tetrapotassium polyphosphate, sodium hexametaphosphate)

Submissions must include at least one of the target compounds for the proposed environmental application. Possible compounds could include, but are not limited to, the following:

- Air pollutants: mercury, carbon monoxide, ozone, sulfur dioxide, hydrogen sulfide, greenhouse gases (e.g., carbon dioxide)
- Inorganic water pollutants: selenium, arsenic, hexavalent chromium, lead, barium, radium
- Organic ground water and municipal water pollutants: carbon tetrachloride, chlorinated alkanes/alkenes, polychlorinated biphenyls, dichloromethane, pesticides, cyano toxins, N-nitrosodimethylamine, pharmaceuticals, endocrine disruptors
- Emerging contaminants: perchlorate, perfluoroalkyls (e.g., perfluorooctane sulfonate,

perfluorooctanoic acid, 1,4 dioxane, cesium and strontium (e.g., Cs 137, Sr 90)

Proposals will be judged by a panel of Carus scientists based on the above criteria, on the evidence of innovative thought, and on the presentation of ideas and supporting information. All decisions of the panel are final. No purchase is necessary to enter the contest. (Additional rules and requirements apply.)

* For complete rules, eligibility, and downloadable application forms, visit the careers section of our website, www.caruscorporation.com . To learn more about Carus and what our products already do, visit our website, connect with us on LinkedIn, and follow us on Facebook and Twitter!

Additional rules and requirements:

Proposals must be original work, submitted in English as a Word document, double-spaced, in 12-point Times New Roman font. Entries must not exceed eight (8) pages. Any charts or tables used must be embedded within the document and will be counted toward the eight-page maximum. All sources must be cited. Peer-reviewed journal references are preferred. Suggested online resources include Google Scholar, ResearchGate, Scifinder, ScienceDirect, and Elsevier. Submissions must include a bibliography (which does not count toward the 8 page maximum). Do not place your name or other identifying information on any pages of your proposal. Identifying information should only go on the application form. Eligible applicants must be currently enrolled in a college or university, and must submit a completed Agreement on Conditions for Submission of Ideas. Current employees of Carus Group or any of its subsidiaries are ineligible. All entries will become the property of Carus and will not be returned. If no applicant meets qualification guidelines, Carus reserves the right in its sole discretion not to select a scholarship/internship winner.

For your safety: In order to qualify for an internship position, applicants must have a scientific or technical background, must have sufficient mobility to access all areas of the plant site in support of assigned work, and must otherwise comply with Carus requirements for employees at Carus Group locations.

Internship qualifications, availability, and preference will not be considered when selecting a scholarship winner. A follow-up application form and/or interview may be used to determine internship qualification. If the selected winner is unable or does not meet all qualifications to participate in a lab internship, said winner is still eligible to receive the \$10,000 scholarship.

Entries must be submitted, with an application form, via email to submissions@caruscorporation.com or via fax to 815-223-4486, and must be received no later than 11:59 pm CST on March 22, 2015. Applications submitted after the deadline for submission, or containing zipped or compressed files will not be accepted.

The Department of Energy's (DOE) Office of Science is pleased to announce that the Office of Science Graduate Student Research (SCGSR) program is now accepting applications for the 2015 solicitation. Applications are due 5:00pm ET on Tuesday April 14, 2015.

The SCGSR program supports supplemental awards to outstanding U.S. graduate students to conduct part of their graduate thesis research at a DOE national laboratory in collaboration with a DOE laboratory scientist for a period of 3 to 12 consecutive months—with the goal of preparing graduate students for scientific and technical careers critically important to the DOE Office of Science mission.

The SCGSR program is open to current Ph.D. students in qualified graduate programs at accredited U.S. academic institutions, who are conducting their graduate thesis research in targeted areas of importance to

the DOE Office of Science. The research opportunity is expected to advance the graduate students' overall doctoral thesis while providing access to the expertise, resources, and capabilities available at the DOE laboratories. The supplemental award provides for additional, incremental costs for living and travel expenses directly associated with conducting the SCGSR research project at the DOE host laboratory during the award period.

The Office of Science expects to make approximately 100 awards in 2015, for project periods beginning anytime between October 2015 and September 2016.

The 2014 program solicitation resulted in awards to 65 graduate students from 50 different universities to conduct thesis research at 15 DOE national laboratories. Detailed information about the program, including eligibility requirements and access to the online application system, can be found at:

<http://science.energy.gov/wdts/scgsr/>.

The SCGSR program is sponsored and managed by the DOE Office of Science's Office of Workforce Development for Teachers and Scientists (WDTS), in collaboration with the six Office of Science research programs offices and the DOE national laboratories, and the Oak Ridge Institute of Science and Education (ORISE).

For any questions, please contact the SCGSR Program Manager, Dr. Ping Ge, at sc.scgsr@science.doe.gov.

The National Research Council of the National Academies sponsors a number of awards for graduate, postdoctoral and senior researchers at [participating federal laboratories and affiliated institutions](#). These awards include generous stipends ranging from \$42,000 - \$80,000 per year for recent Ph.D. recipients, and higher for additional experience. [Graduate](#) entry level stipends begin at \$30,000. These awards provide the opportunity for recipients to do independent research in some of the best-equipped and staffed laboratories in the U.S. Research opportunities are open to U.S. citizens, permanent residents, and for some of the laboratories, foreign nationals.

Detailed program information, including online applications, instructions on [how to apply](#) and a [list of participating laboratories](#), is available on the NRC Research Associateship Programs [Website](#) (see link above).

Questions should be directed to the NRC at 202-334-2760 (phone) or rap@nas.edu. There are four annual review cycles.

Review Cycle: **February**; Opens December 1; Closes February 1

Review Cycle: **May**; Opens March 1; Closes May 1

Review Cycle: **August**; Opens June 1; Closes August 1

Review Cycle: **November**; Opens September 1; Closes November 1

Applicants should contact prospective Adviser(s) at the lab(s) prior to the application deadline to discuss their research interests and funding opportunities. More detailed information and an online application can be found at www.nationalacademies.org/rap.